

U.S. Appl. No. 09/849,856
Reply to Final Office Action dated August 10, 2006

PATENT
450100-03207

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Currently Amended) A playback apparatus for extracting a playback signal from a recording medium without performing tracking control, said playback apparatus comprising:
 - an adaptive equalizing circuit for performing equalization of said playback signal;
 - detection means for determining an envelope value of said playback signal,
 - wherein said adaptive equalizing circuit is controlled in accordance with an envelope value from said detection means; and
 - phase-locked loop means responsive to said playback signal to control said adaptive equalizing circuit when a phase of a clock generated by the phase-locked loop means is locked to the playback signal,
 - wherein said phase-locked loop means generates a detection signal indicating whether the phase of said clock is locked to the playback signal, ~~and~~
 - wherein said phase-locked loop means extracts a data clock from said playback signal only when the envelope value of said playback signal is greater than or equal to a predetermined value, and
 - wherein a characteristic of said adaptive equalizing circuit is changed only when said detection signal indicates that the phase of said clock is locked to the playback signal and the envelope value of said playback signal is greater than or equal to said predetermined value.

U.S. Appl. No. 09/849,856
Reply to Final Office Action dated August 10, 2006

PATENT
450100-03207

2. (Previously Presented) The playback apparatus according to claim 1,
wherein
said adaptive equalizing circuit comprises:
a plurality of unit delay means for delaying said playback signal in sequence;
a plurality of weighting means for performing weighting on each delayed signal;
and
addition means for adding together each weighted signal, and wherein
each of the weighted signals of said plurality of weighting means is changed in
accordance with said playback signal, and when the envelope value of said playback signal is
more than or equal to a predetermined value, the coefficients in said weighting means are
changed.

3. (Previously Presented) The playback apparatus according to claim 2,
wherein
said phase-locked loop means is used for forming a signal locked to an arbitrary
phase of said playback signal, such that when phase lock has been performed by said phase-
locked loop means, the coefficients in said weighting means are changed.

4. (Currently Amended) An adaptive equalizing circuit for changing each
weighting coefficient of a plurality of weighting means in accordance with an input signal, said
adaptive equalizing circuit comprising:
a plurality of unit delay means for delaying the input signal in sequence;

U.S. Appl. No. 09/849,856
Reply to Final Office Action dated August 10, 2006

PATENT
450100-03207

the plurality of weighting means for performing weighting on each delayed signal;

addition means for adding together each weighted signal;

detection means for determining an envelope value of said input signal; and

phase-locked loop means responsive to said input signal when the envelope value from said detection means is more than or equal to a predetermined value and when a phase of a clock generated by the phase-locked loop means is locked to the playback signal, for adjusting said adaptive equalizing circuit to control a change of weighting coefficients in said weighting means,

wherein said phase-locked loop means generates a detection signal indicating whether the phase of said clock is locked to the input signal, and

wherein said phase-locked loop means extracts a data clock from said input signal only when an envelope value of said input signal is greater than or equal to a predetermined value, and

wherein a characteristic of said adaptive equalizing circuit is changed only when said detection signal indicates that the phase of said clock is locked to the input signal and the envelope value of said input signal is greater than or equal to said predetermined value.

5. (Previously Presented) The adaptive equalizing circuit according to claim 4, wherein

said phase-locked loop means is used for forming a signal locked to an arbitrary phase of said input signal, such that when phase lock has been performed by said phase-locked loop means, the coefficients in said weighting means are changed.

U.S. Appl. No. 09/849,856
Reply to Final Office Action dated August 10, 2006

PATENT
450100-03207

6. (Currently Amended) A playback method for extracting a playback signal from a recording medium without performing tracking control, said playback method comprising:

a detection step for determining an envelope value of said playback signal;

a step for performing adaptive equalization on said playback signal in accordance with said envelope value;

a step for controlling said adaptive equalization when a phase of a clock generated by a phase-locked loop is locked to the playback signal;

generating a detection signal indicating whether the phase of said clock is locked to the playback signal, and

extracting a data clock from said playback signal only when said envelope value of said playback signal is greater than or equal to a predetermined value, and

changing a characteristic of said adaptive equalizing circuit only when said detection signal indicates that the phase of said clock is locked to the playback signal and the envelope value of said playback signal is greater than or equal to said predetermined value.

7. (Previously Presented) The playback method according to claim 6, wherein

said step for performing adaptive equalization comprises the steps of:

delaying said playback signal in sequence by a plurality of unit delay means;

weighting each delayed signal by respective coefficients; and

U.S. Appl. No. 09/849,856
Reply to Final Office Action dated August 10, 2006

PATENT
450100-03207

adding together each weighted signal, and wherein, when the envelope value of said playback signal is more than or equal to a predetermined value, said weighting step changes said weighting coefficients in accordance with said playback signal.

8. (Previously Presented) The playback method according to claim 7, further comprising a step of forming a signal which is locked to an arbitrary phase of said playback signal, wherein, when phase lock has been performed, said weighting coefficients are changed in accordance with said playback signal.

9-11. (Canceled)